



510015-256.TXT

SEQUENCE LISTING

<110> De Robertis, Edward M.
Bouwmeester, Tewis

<120> Endoderm, Cardiac and Neural Inducing
Factors

<130> 510015-256

<140> US 09/903,180

<141> 2001-07-11

<150> US 60/020,150

<151> 1996-06-20

<160> 10

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 270

<212> PRT

<213> Xenopus

<400> 1

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Ser	Leu	Asn	Ser	Arg	Gly	Tyr	Phe	Arg	Lys	Glu	Arg	Gly	Ala	Arg	Arg
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Ser	Lys	Ile	Leu	Leu	Val	Asn	Thr	Lys	Gly	Leu	Asp	Glu	Pro	His	Ile
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Gly	His	Gly	Asp	Phe	Gly	Leu	Val	Ala	Glu	Leu	Phe	Asp	Ser	Thr	Arg
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Thr	His	Thr	Asn	Arg	Lys	Glu	Pro	Asp	Met	Asn	Lys	Val	Lys	Leu	Phe
			85					90						95	
Ser	Thr	Val	Ala	His	Gly	Asn	Lys	Ser	Ala	Arg	Arg	Lys	Ala	Tyr	Asn
			100					105					110		
Gly	Ser	Arg	Arg	Asn	Ile	Phe	Ser	Arg	Arg	Ser	Phe	Asp	Lys	Arg	Asn
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Thr	Glu	Val	Thr	Glu	Lys	Pro	Gly	Ala	Lys	Met	Phe	Trp	Asn	Asn	Phe
	130						135					140			
Leu	Val	Lys	Met	Asn	Gly	Ala	Pro	Gln	Asn	Thr	Ser	His	Gly	Ser	Lys
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Ala	Gln	Glu	Ile	Met	Lys	Glu	Ala	Cys	Lys	Thr	Leu	Pro	Phe	Thr	Gln
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Asn	Ile	Val	His	Glu	Asn	Cys	Asp	Arg	Met	Val	Ile	Gln	Asn	Asn	Leu

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TECH CENTER 1600/2900

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Met	Val	Glu	Glu	Cys	Thr	Cys	Glu	Ala	His	Lys	Ser	Asn	Phe	His	Gln
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<211> 1338

<212> DNA

<213> Xenopus

<400> 2

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<211> 318

<212> PRT

<213> Xenopus frazzled

<400> 3

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Protein 1																		
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Pro	Val	Arg	Ile	Pro	Met	Cys	Lys	Ser	Met	Pro	Trp	Asn	Met	Thr	Lys			
35				40						45								
Met	Pro	Asn	His	Leu	His	His	Ser	Thr	Gln	Ala	Asn	Ala	Ile	Leu	Ala			
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Ile	Glu	Gln	Phe	Glu	Gly	Leu	Leu	Thr	Thr	Glu	Cys	Ser	Gln	Asp	Leu			
65					70						75						80	
Leu	Phe	Phe	Leu	Cys	Ala	Met	Tyr	Ala	Pro	Ile	Cys	Thr	Ile	Asp	Phe			
				85						90						95		
Gln	His	Glu	Pro	Ile	Lys	Pro	Cys	Lys	Ser	Val	Cys	Glu	Arg	Ala	Arg			
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Ala	Gly	Cys	Glu	Pro	Ile	Leu	Ile	Lys	Tyr	Arg	His	Thr	Trp	Pro	Glu			
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Ser	Pro	Glu	Ala	Ile	Val	Thr	Val	Glu	Gln	Gly	Thr	Asp	Ser	Met	Pro			
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His	Cys	Lys	Cys	Lys	Pro	Met	Lys	Ala	Thr	Gln	Lys	Thr	Tyr	Leu	Lys			
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Asn	Asn	Tyr	Asn	Tyr	Val	Ile	Arg	Ala	Lys	Val	Lys	Glu	Val	Lys	Val			
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Lys	Cys	His	Asp	Ala	Thr	Ala	Ile	Val	Glu	Val	Lys	Glu	Ile	Leu	Lys			
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Ser	Ser	Leu	Val	Asn	Ile	Pro	Lys	Asp	Thr	Val	Thr	Leu	Tyr	Thr	Asn			
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Ser	Gly	Cys	Leu	Cys	Pro	Gln	Leu	Val	Ala	Asn	Glu	Glu	Tyr	Ile	Ile			
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Met	Gly	Tyr	Glu	Asp	Lys	Glu	Arg	Thr	Arg	Leu	Leu	Leu	Val	Glu	Gly			
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Ser	Leu	Ala	Glu	Lys	Trp	Arg	Asp	Arg	Leu	Ala	Lys	Lys	Val	Lys	Arg			
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Trp	Asp	Gln	Lys	Leu	Arg	Arg	Pro	Arg	Lys	Ser	Lys	Asp	Pro	Val	Ala			
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<211> 1875
<212> DNA
<213> Xenopus frazzled
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<210> 5

<211> 896

<212> PRT

<213> Xenopus

<400> 5

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Glu Pro Pro Gly Thr Val Ile Ala Val Leu Ser Gln His Ser Ile Phe
 35          40          45
Asn Thr Thr Asp Ile Pro Ala Thr Asn Phe Arg Leu Met Lys Gln Phe
 50          55          60
Asn Asn Ser Leu Ile Gly Val Arg Glu Ser Asp Gly Gln Leu Ser Ile
 65          70          75          80
Met Glu Arg Ile Asp Arg Glu Gln Ile Cys Arg Gln Ser Leu His Cys
 85          90          95
Asn Leu Ala Leu Asp Val Val Ser Phe Ser Lys Gly His Phe Lys Leu
100         105         110
Leu Asn Val Lys Val Glu Val Arg Asp Ile Asn Asp His Ser Pro His
115         120         125
Phe Pro Ser Glu Ile Met His Val Glu Val Ser Glu Ser Ser Ser Val
130         135         140
Gly Thr Arg Ile Pro Leu Glu Ile Ala Ile Asp Glu Asp Val Gly Ser

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145		150		155		160
Asn Ser Ile Gln	Asn Phe Gln Ile Ser	Asn Asn Ser His Phe Ser Ile				
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	180	185		190		
Met Arg Glu Leu	Asp Arg Glu Ile Gln Pro Thr Tyr Ile	Met Glu Leu				
	195	200		205		
Leu Ala Met Asp	Gly Gly Val Pro Ser Leu Ser Gly Thr	Ala Val Val				
	210	215		220		
Asn Ile Arg Val	Leu Asp Phe Asn Asp Asn Ser Pro Val	Phe Glu Arg				
	225	230		235		240
Ser Thr Ile Ala	Val Asp Leu Val Glu Asp Ala Pro Leu Gly Tyr	Leu				
	245	250		255		
Leu Leu Glu Leu	His Ala Thr Asp Asp Glu Gly Val	Asn Gly Glu				
	260	265		270		
Ile Val Tyr Gly	Phe Ser Thr Leu Ala Ser Gln Glu Val	Arg Gln Leu				
	275	280		285		
Phe Lys Ile Asn	Ser Arg Thr Gly Ser Val Thr Leu Glu Gly Gln	Val				
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Asp Phe Glu Thr	Lys Gln Thr Tyr Glu Phe Glu Val Gln	Ala Gln Asp				
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Leu Gly Pro Asn	Pro Leu Thr Ala Thr Cys Lys Val Thr	Val His Ile				
	325	330		335		
Leu Asp Val Asn	Asp Asn Thr Pro Ala Ile Thr Ile Thr	Pro Leu Thr				
	340	345		350		
Thr Val Asn Ala	Gly Val Ala Tyr Ile Pro Glu Thr Ala Thr	Lys Glu				
	355	360		365		
Asn Phe Ile Ala	Leu Ile Ser Thr Thr Asp Arg Ala Ser Gly Ser	Asn				
	370	375		380		
Gly Gln Val Arg	Cys Thr Leu Tyr Gly His Glu His Phe Lys Leu	Gln				
	385	390		395		400
Gln Ala Tyr Glu	Asp Ser Tyr Met Ile Val Thr Thr Ser Thr	Leu Asp				
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Arg Glu Asn Ile	Ala Ala Tyr Ser Leu Thr Val Val Ala Glu Asp	Leu				
	420	425		430		
Gly Phe Pro Ser	Leu Lys Thr Lys Lys Tyr Tyr Thr Val Lys Val	Ser				
	435	440		445		
Asp Glu Asn Asp	Asn Ala Pro Val Phe Ser Lys Pro Gln Tyr Glu	Ala				
	450	455		460		
Ser Ile Leu Glu	Asn Asn Ala Pro Gly Ser Tyr Ile Thr Thr	Val Ile				
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Ala Arg Asp Ser	Asp Ser Asp Gln Asn Gly Lys Val Asn Tyr Arg	Leu				
	485	490		495		
Val Asp Ala Lys	Val Met Gly Gln Ser Leu Thr Thr Phe Val Ser	Leu				
	500	505		510		
Asp Ala Asp Ser	Gly Val Leu Arg Ala Val Arg Ser Leu Asp Tyr	Glu				
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Lys Leu Lys Gln	Leu Asp Phe Glu Ile Glu Ala Ala Asp Asn Gly	Ile				
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Pro Gln Leu Ser	Thr Arg Val Gln Leu Asn Leu Arg Ile Val Asp	Gln				
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Gln Leu Lys Ala Glu Asp Ser Asp Glu Gly His Asn Ser Gln Leu Phe
      595      600      605
Tyr Thr Ile Leu Arg Asp Pro Ser Arg Leu Phe Ala Ile Asn Lys Glu
      610      615      620
Ser Gly Glu Val Phe Leu Lys Lys Gln Leu Asn Ser Asp His Ser Glu
625      630      635      640
Asp Leu Ser Ile Val Val Ala Val Tyr Asp Leu Gly Arg Pro Ser Leu
      645      650      655
Ser Thr Asn Ala Thr Val Lys Phe Ile Leu Thr Asp Ser Phe Pro Ser
      660      665      670
Asn Val Glu Val Val Ile Leu Gln Pro Ser Ala Glu Glu Gln His Gln
      675      680      685
Ile Asp Met Ser Ile Ile Phe Ile Ala Val Leu Ala Gly Gly Cys Ala
      690      695      700
Leu Leu Leu Leu Ala Ile Phe Phe Val Ala Cys Thr Cys Lys Lys Lys
705      710      715      720
Ala Gly Glu Phe Lys Gln Val Pro Glu Gln His Gly Thr Cys Asn Glu
      725      730      735
Glu Arg Leu Leu Ser Thr Pro Ser Pro Gln Ser Val Ser Ser Ser Leu
      740      745      750
Ser Gln Ser Glu Ser Cys Gln Leu Ser Ile Asn Thr Glu Ser Glu Asn
      755      760      765
Cys Ser Val Ser Ser Asn Gln Glu Gln His Gln Gln Thr Gly Ile Lys
      770      775      780
His Ser Ile Ser Val Pro Ser Tyr His Thr Ser Gly Trp His Leu Asp
785      790      795      800
Asn Cys Ala Met Ser Ile Ser Gly His Ser His Met Gly His Ile Ser
      805      810      815
Thr Lys Val Gln Trp Ala Lys Glu Ile Val Thr Ser Met Thr Val Thr
      820      825      830
Leu Ile Leu Val Glu Asn Gln Lys Arg Arg Ala Leu Ser Ser Gln Cys
      835      840      845
Arg His Lys Pro Val Leu Asn Thr Gln Met Asn Gln Gln Gly Ser Asp
      850      855      860
Met Pro Ile Thr Ile Ser Ala Thr Glu Ser Thr Arg Val Gln Lys Met
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<210> 6

<211> 3657

<212> DNA

<213> Xenopus

<400> 6

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60

120

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<213> Mouse FRZB-1

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Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
      50           55           60
Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
      65           70           75           80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
      85           90           95
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Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
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Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Met
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Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
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Ala Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu Tyr Thr Thr
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Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu Tyr Val Ile
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<212> DNA

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 Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
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 Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
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 Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
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 Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg
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 Trp Asp Met Lys Leu Arg His Leu Gly Leu Ser Lys Ser Asp Ser Ser
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